

AMENDMENTS TO THE CLAIMS

Claim 1 (currently amended). A vehicle occupant support apparatus for installation in a vehicle seat, [seat arrangement having a plurality of air cells therein for supporting a user characterized by] the apparatus comprising:

an array of [a plurality of] air cells including [with] expandable chambers [comprising a fixed array]; and

a control module having an input connectable to [controller for connecting said plurality of air cells and] a fluid supply system and including only enough outputs to connect respective cells of a portion of the array to the fluid supply system via the control module [that includes fittings for cutting off one or more of the air cells from the controller to conform] thereby allowing the [fixed] array of air cells to be conformed to any one of a plurality of different vehicle types by connecting to the limited number of outputs only those cells that are appropriate or intended for use in a given vehicle type.

Claim 2 (currently amended). [The vehicle seat arrangement of claim 1 further characterized by said fixed array being part of a modular seating unit; said modular seating unit including] A vehicle occupant support apparatus for installation in a vehicle seat, the apparatus comprising:

an array of air cells including expandable chambers; and

a control module for connecting the air cells to a fluid supply system and including a controller, a pump, [supply hoses,] and a wiring harness connected [; a connection for securing said wiring harness] to [a] the controller, the [; said] controller being selected from among [comprising one of] a plurality of different function controllers [selected to provide] configured to operate the occupant support apparatus according to different respective user preferences [preference operation of said modular seating unit].

Claim 3 (currently amended). The vehicle occupant support apparatus [seat arrangement] of either claim 1 or claim 2 wherein the control module [said controller] is programmed to have target pressures attained by using a programmed time of inflation or deflation of the expandable chambers as established by desired program sequences of operation by the control module [controller].

Claim 5 (currently amended). The vehicle occupant support apparatus [seat arrangement] of claim 3 wherein the valves are provided and the control module [said controller] is programmed to have a programmed time of inflation or deflation established by sequentially activating the [said] valves individually and energizing the [said at least one] pump for predetermined periods, and varying the number and location of the expandable chambers pressurized [in the more than one expandable chambers] producing localized pressures exerted on a supported member. [,]

Claim 6 (currently amended). The vehicle occupant support apparatus [seat arrangement] of claim 1 including a pressure source and an exhaust system configured to provide a pneumatically controlled support surface for the seating or body support system and wherein the massage movement includes a sequence of inflate and deflate between the respective expandable chambers [of the more than one expandable chambers] so as to provide concentrated massage while maintaining a directional movement of the expandable chambers producing the massage action.

Claim 7 (currently amended). The vehicle occupant support apparatus [seat arrangement] of claim 6 including providing the [more than one] expandable chambers as a series of expandable chambers and providing more than one user selected massage type and a preprogrammed manner of individual expandable chamber inflation and deflation to produce either a pulse type control of individual expandable chambers in both inflate and deflate steps through the series of expandable chambers so as to produce the aforesaid concentrated massage action.

Claim 8 (currently amended). The vehicle occupant support apparatus [seat arrangement] of claim 1 further including [characterized by providing] an inflate switch and a deflate switch and wherein the control sequence is initiated by signals from the [said] inflate and deflate switches to the [said] controller and wherein a manual inflate or deflate control is established by inputting the controller with input signals from manual operation of the inflate or deflate switches and wherein the controller is preprogrammed to provide a timed inflate and exhaust of the expandable chambers.

Claim 9 (currently amended). The vehicle occupant support apparatus [seat arrangement] of claim 1 [further characterized by providing one expandable chamber as] further including:

a lower lumbar expandable chamber; [,]

an upper lumbar expandable chamber; and

a middle expandable chamber, [and wherein] the pressure source and exhaust system [are] being controlled by an automatic controller controlled sequence of massage in which the sequence includes fully inflating the lower lumbar expandable chamber; then transferring the air from such lower lumbar expandable chamber to the upper lumbar expandable chamber and then to the middle or third expandable chamber and following such inflation deflating each of the multiple expandable chambers from the upper expandable chamber down to the lower expandable chamber and repeating the aforesaid automatic massage for a timed period.

Claim 10 (currently amended). The vehicle occupant support apparatus [seat arrangement] of claim 9 [further characterized by depressing] wherein the switches are configured to stop the automatic massage action when depressed for a predetermined period of time [to stop the automatic massage action].

Claim 11 (currently amended). The vehicle occupant support apparatus [seat arrangement] of claim 1 further including: [characterized by providing] sensors and other switches; and

a controller operative in response to multiple input signals including one or more of:

- an occupant detection condition;
- a temperature condition;
- system power-up;
- an on-off switch; and
- a system override switch.

Claim 12 (currently amended). The vehicle occupant support apparatus [seat arrangement] of claim 1 further including; [characterized by a providing]
a pressurized manifold; and [providing]
dual valves disposed between the pressurized manifold and the one or more expandable chambers [for controlling] and configured to control air flow from a supply manifold or to exhaust the one or more expandable chambers.

Claim 13 (currently amended). The vehicle occupant support apparatus [seat arrangement] of claim 1 [further characterized by] wherein the pressure source [including] includes a pump supplying the manifold, [; and operating] the pump being operable during exhaust from the one or more expandable chambers to back pressure the manifold.

Claim 14 (currently amended). The vehicle occupant support apparatus [seat arrangement] of claim 12 including [providing the one or more expandable chambers as] at least first second and third expandable chambers, [; providing] the controller being configured to provide a massage sequence including:
deflating all of the expandable chambers;
connecting the pressurized manifold to the first expandable chamber;
deflating the first expandable chamber while inflating the second expandable chamber;

deflating the second expandable chamber while inflating the third expandable chamber;

deflating the third expandable chamber while inflating the second expandable chamber and deflating the second expandable chamber; and
repeating the aforesaid massage sequence.

Claim 15 (currently amended). The vehicle occupant support apparatus [seat arrangement] of claim 12 including [providing the one or more expandable chambers as] at least first second and third expandable chambers, [; providing] the controller being configured to provide a massage sequence including:

deflating all of the expandable chambers; connecting the pressurized manifold to the first expandable chamber to inflate the first expandable chamber;

deflating the first expandable chamber while inflating the second expandable chamber;

deflating the second expandable chamber while inflating the third expandable chamber; and

deflating the third expandable chamber and repeating the aforesaid massage sequence.

Claim 16 (new). The vehicle occupant support apparatus of claim 1 wherein:

the control module includes a controller and a pump; and

the occupant support apparatus includes hoses connected at one end to respective individual expandable chambers of the array and connectable at respective opposite ends to the control module.

Claim 17 (new). A method for customizing a vehicle occupant support apparatus to suit a particular vehicle application, the method including the steps of:

providing a vehicle occupant support apparatus including an array of air cells including expandable chambers configured to be carried by a vehicle seat, a controller connected to the air cells, and a fluid supply system connectable to the air cells through the controller;

selecting from among the air cells of the array, those air cells suited to a desired vehicle seat application; and

disconnecting all but the selected air cells from the controller.

Claim 18 (new). A method for customizing a vehicle occupant support apparatus to suit a particular vehicle application, the method including the steps of:

providing a vehicle occupant support apparatus including an array of air cells including expandable chambers configured to be carried by a vehicle seat, a controller connectable to the air cells, and a fluid supply system connectable to the air cells through the controller;

selecting from among the air cells of the array, those air cells suited to a desired vehicle application; and

connecting the selected air cells to the controller.